

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (canceled)

2. (currently amended) The method as claimed in claim 18 wherein ~~in said step of~~ said interface providing a connection between said terminal and said data network, includes associating said connection ~~is associated~~ with a predefined set of data network addresses in said data network.

3. (previously presented) The method as claimed in claim 2 in which each said valid interface telephone number has an associated predefined set of data network addresses.

4. (currently amended) The method as claimed in claim 3 further ~~including the step of~~ comprising arranging a telephone network billing system to charge for access to each said valid interface telephone number at an associated pre-defined tariff.

5. (currently amended) The method as claimed in claim 18 in which, ~~in the step of~~ said interface receiving a connection through said telephone

network from said terminal, ~~includes~~ said telephone network is arranged to ~~associate~~ associating said ~~dialled~~ called interface telephone number with a further interface telephone number, said further interface telephone number being used to complete said connection.

6. (currently amended) The method as claimed in claim 18, further comprising ~~the steps of~~:

- said interface ascertaining said terminal telephone number;
- said interface checking that said terminal telephone number is not one of one or more invalid terminal telephone numbers associated with said connection service; and
- in the event that said terminal telephone number is one of said one or more invalid terminal telephone numbers, said interface denying a connection between said terminal and said data network.

7. (currently amended) The method as claimed in claim 18, in which said interface comprises:

- data network access means connected to both said telephone network and said data network; and
- authentication means;
- said method ~~including the steps of~~ includes

said data network access means ascertaining said ~~dialed~~called interface telephone number from said telephone network;

passing said ascertained ~~dialed~~called interface telephone number to said authentication means;

said authentication means checking that said ~~dialed~~called interface telephone number is one of one or more valid interface telephone numbers associated with said connection service; and

in the event that said ~~dialed~~called interface telephone number is one of said valid interface telephone numbers, said authentication means causing said data network access means to allocate a data network address to said terminal and to transmit said data network address to said terminal.

8.-12. (canceled)

13. (currently amended) A method of providing a connection service between a terminal and a data network, said terminal being arranged to be connected to an access network and said access network being connected to said data network through an interface, said method comprising ~~the steps of:~~

in response to said terminal calling an interface access network address from a terminal access network address, said interface receiving a connection through said access network from said terminal;

said interface ascertaining an access network connection route attribute from said access network;

said interface checking that said access network connection route attribute is one of one or more valid access network connection route attributes associated with said connection service;

in the event that said access network connection route attribute is one of said valid access network connection route attributes, said interface allocating a data network address to said terminal and transmitting said data network address to said terminal; and

said interface providing a connection between said terminal and said data network.

14. (canceled)

15. (previously presented) The interface as claimed in claim 20 wherein said means arranged to provide a connection between said terminal and said data network, is arranged to associate said connection with a predefined set of data network addresses in said data network.

16. (previously presented) The interface as claimed in claim 15 in which each said valid interface telephone number has an associated predefined set of data network addresses.

17. (previously presented) The interface as claimed in claim 20, further comprising:

means arranged to ascertain said terminal telephone number;

means arranged to check that said terminal telephone number is not one of one or more invalid terminal telephone numbers associated with said connection service; and

means arranged to deny a connection between said terminal and said data network in the event that said terminal telephone number is one of said one or more invalid terminal telephone numbers.

18. (currently amended) The method as claimed in claim 13, wherein said access network comprises a telephone network, said called interface access network address comprises ~~an~~ a called interface telephone number, said terminal access network address comprises a terminal telephone number, said access network connection route attribute comprises said ~~dialled~~ called interface telephone number and said one or more valid access network connection route attributes comprises one or more valid interface telephone numbers.

19. (currently amended) An interface for providing a connection service between a terminal and a data network, said terminal being arranged to be connected to an access network and said access network being connected to said data network through said interface, said interface comprising:

means arranged to receive a connection through said access network from said terminal in response to said terminal calling an interface access network address from a terminal access network address;

means arranged to ascertain an access network connection route attribute from said ~~telephone~~ access network;

means arranged to check that said access network connection route attribute is one of one or more valid access network connection route attributes associated with said connection service;

means responsive to said checking means arranged to allocate a data network address to said terminal and transmitting said data network address to said terminal in the event that said access network connection route attribute is one of said valid access network connection route attributes; and

means arranged to provide a connection between said terminal and said data network.

20. (currently amended) The interface as claimed in claim 19, wherein said access network comprises a telephone network, said called interface

access network address comprises ~~an~~ a called interface telephone number, said terminal access network address comprises a terminal telephone number, said access network connection route attribute comprises said ~~dialled~~ called interface telephone number and said one or more valid access network connection route attributes comprise one or more valid interface telephone numbers.

21. (new) A method of operating an interface having a network access system and an authentication system to provide a connection service between a terminal connected to the network access system and a data network, said method comprising:

ascertaining, in the network access system, a telephone number of a call placed by the terminal to connect to the network access system;

sending a message from the network access system to the authentication system, the message containing the called telephone number but not a password uniquely identifying the terminal or user of the terminal;

checking, in the authentication system, whether the called telephone number corresponds to one or more stored valid telephone numbers; and

returning a message from the authentication system to the network access system that access by the terminal to the data network is allowable if the called telephone number does correspond to one or more of the stored valid telephone numbers.

22. (new) The method of claim 21 further comprising transmitting an address of the data network from the network access system to the terminal if the called telephone number does correspond to one or more of the stored valid telephone numbers.

23. (new) An interface for providing a connection service between a terminal and a data network, the interface comprising:

a network access system for connecting to the terminal and ascertaining a telephone number of a call placed by the terminal to connect to the network access system, and sending a message containing the called telephone number but not a password uniquely identifying the terminal or user of the terminal; and

an authentication system for receiving the message sent from the network access system, checking whether the telephone number of the call placed by the terminal corresponds to one or more stored valid telephone numbers, and returning a message to the network access system that access by the terminal to the data network is allowable if the telephone number of the call placed by the terminal does correspond to one or more of the stored valid telephone numbers.

24. (new) The interface of claim 23 wherein the network access system transmits an address of the data network to the terminal if the valid telephone number of the call placed by the terminal does correspond to one or more of the

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stored telephone numbers.